Appendix II with a clean copy of

pending claims 1-19, 27-40, 42-46, 48-52, 64-67, 70-75, and 83-86

1. A method for amplifying a target polynucleotide contained in a sample comprising the steps of:

(a) contacting the sample with a first support which binds to the target polynucleotide;

(b) substantially separating the support and bound target polynucleotide from the sample, thereby producing a separated target polynucleotide; and

(c) amplifying *in vitro* the separated target polynucleotide of (b).

2. The method of claim 1 wherein the first support is retrievable.

3. The method of claim 1 wherein the first support includes a probe which binds with the target polynucleotide.

4. The method of claim 1 wherein said amplifying *in vitro* comprises amplifying said separated target polynucleotide with a polymerase.

5. The method of claim 4 wherein the polymerase is a DNA polymerase, an RNA polymerase, or a transcriptase.

6. The method of claim 4 wherein the separated target polynucleotide is a DNA polynucleotide and the polymerase is a DNA polymerase.

7. A method for detecting a target polynucleotide contained in a sample comprising the steps of:

(a) contacting the sample with a first support which binds to the target polynucleotide;

(b) substantially separating the first support and bound target polynucleotide from the sample, thereby producing a separated target polynucleotide;

(c) amplifying *in vitro* the separated target polynucleotide of (b), thereby producing an amplified target polynucleotide; and

(d) detecting the presence of the amplified target polynucleotide of (c) as indicative of the presence of the target polynucleotide in said sample.

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8. The method of claim 7 wherein the first support is retrievable.

9. The method of claim 8 wherein the first support includes a probe which binds with the target polynucleotide.

10. The method of claim 7 wherein said amplifying *in vitro* comprises amplifying said separated target polynucleotide with a polymerase.

11. The method of claim 10 wherein the polymerase is a DNA polymerase, an RNA polymerase, or a transcriptase.

12. The method of claim 11 wherein the separated target polynucleotide is a DNA polynucleotide and the polymerase is a DNA polymerase.

13. The method of claim 7 wherein the amplified target polynucleotide is contacted with a label, and the presence of the target polynucleotide in the sample is indicated by detection of said label.

14. The method of claim 7 wherein the amplified target polynucleotide is contacted with a labeled probe, and the presence of the target polynucleotide in the sample is indicated by detection of said labeled probe.

15. The method of claim 7 wherein the amplified target polynucleotide is contacted with a second support which binds to the amplified target polynucleotide.

16. The method of claim 15 wherein the second support includes a labeled probe, and the presence of the target polynucleotide in the sample is indicated by detection of said labeled probe.

17. The method of claim 16 wherein said amplifying *in vitro* comprises amplifying said separated target polynucleotide with a polymerase.

18. The method of claim 17 wherein the separated target polynucleotide is a DNA polynucleotide and the polymerase is a DNA polymerase.

19. A method for detecting a target polynucleotide contained in a sample comprising the steps of:

(a) contacting the sample with a first support which binds to the target polynucleotide;

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(b) substantially separating the first support and bound target polynucleotide from the sample, thereby producing a separated target polynucleotide;

(c) amplifying *in vitro* the separated target polynucleotide of (b) with a DNA polymerase, thereby producing an amplified target polynucleotide;

(d) contacting the amplified target polynucleotide of (c) with a second support which binds to the amplified target polynucleotide and also with a labeled probe which binds to the amplified target polynucleotide; and

(e) detecting the presence of the labeled probe as indicative of the presence of the target polynucleotide in said sample.

[claims 20-26 canceled]

27. A method for amplifying a target polynucleotide contained in a sample medium comprising the steps of:

(a) contacting the sample medium with a reagent comprising a first nucleic acid probe which binds to the target polynucleotide to form a probe-target complex;

(b) contacting the sample medium with a support which binds to the first nucleic acid probe of the probe-target complex;

(c) substantially separating the support and bound probe-target complex from the sample medium;

(d) contacting the support and bound probe-target complex with a second medium;

(e) releasing the probe-target complex into the second medium;

(f) substantially separating the support from the second medium; and

(g) amplifying *in vitro* the target polynucleotide in the probe-target complex present in the second medium.

28. A method for detecting a target polynucleotide contained in a sample medium comprising the steps of:

(a) contacting the sample medium with a reagent comprising a first nucleic acid probe which binds to the target polynucleotide to form a probe-target complex;

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(b) contacting the sample medium with a support which binds to the first nucleic acid probe of the probe-target complex;

(c) substantially separating the support and bound probe-target complex from the sample medium;

(d) contacting the support and bound probe-target complex with a second medium;

(e) releasing the probe-target complex into the second medium;

(f) substantially separating the support from the second medium;

(g) amplifying *in vitro* the target polynucleotide in the probe-target complex present in the second medium; and

(h) detecting the presence of the target polynucleotide in the second medium as indicative of the presence of the target polynucleotide in said sample.

29. The method of detecting a target polynucleotide of claim 28 wherein said amplifying *in vitro* comprises amplifying said target polynucleotide with a polymerase.

30. The method for detecting a target polynucleotide of claim 29 wherein the polymerase is a DNA polymerase, an RNA polymerase, or a transcriptase.

31. The method for detecting a target polynucleotide of claim 30 wherein the polymerase is a DNA polymerase.

32. The method for amplifying a target polynucleotide of claim 27 wherein said amplifying *in vitro* comprises amplifying said target polynucleotide with a polymerase.

33. The method for amplifying a target polynucleotide of claim 32 wherein the polymerase is a DNA polymerase.

34. A method for amplifying a target polynucleotide contained in a sample medium comprising the steps of:

(a) contacting the sample medium with a support and a probe which binds to the target polynucleotide and the support;

(b) substantially separating the support and bound probe and target polynucleotide from the sample medium;

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(c) contacting the support and bound probe and target polynucleotide with a second medium;

(d) releasing the target polynucleotide of (c) into the second medium;

(e) substantially separating the support and bound probe from the second medium; and

(f) amplifying *in vitro* the target polynucleotide present in the second medium.

35. The method for amplifying a target polynucleotide of claim 34 wherein said amplifying *in vitro* comprises amplifying said target polynucleotide with a polymerase.

36. The method for amplifying a target polynucleotide of claim 35 wherein the polymerase is a DNA polymerase, an RNA polymerase, or a transcriptase.

37. The method for amplifying a target polynucleotide of claim 36 wherein the polymerase is a DNA polymerase.

38. A method for detecting a target polynucleotide contained in a sample medium comprising the steps of:

(a) contacting the sample medium with a support and probe which binds to the target polynucleotide and the support;

(b) substantially separating the support and bound probe and target polynucleotide from the sample medium;

(c) contacting the support and bound probe and target polynucleotide with a second medium;

(d) releasing the target polynucleotide of (c) into the second medium;

(e) substantially separating the support and bound probe from the second medium;

(f) amplifying *in vitro* the target polynucleotide present in the second medium, thereby producing an amplified target polynucleotide; and

(g) detecting the presence of the amplified target polynucleotide in the second medium as indicative of the presence of the target polynucleotide in said sample.

39. The method for detecting a target polynucleotide of claim 38 wherein said amplifying *in vitro* comprises amplifying said target polynucleotide with a polymerase.

40. The method for detecting a target polynucleotide of claim 39 wherein the polymerase is a DNA polymerase.

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[claim 41 canceled]

42. The amplification method of claim 1 wherein said amplifying *in vitro* is linear or exponential.

43. The amplification method of claim 42 wherein said amplifying *in vitro* is exponential.

44. The amplification method of claim 1 wherein said amplifying *in vitro* comprises amplifying said separated target polynucleotide with at least one oligonucleotide primer.

45. The amplification method of claim 44 wherein said amplifying *in vitro* is linear or exponential.

46. The amplification method of claim 1 wherein said amplifying *in vitro* comprises amplifying said separated target polynucleotide with more than one polymerase.

[claim 47 canceled]

48. The detection method of claim 7 wherein said amplifying *in vitro* is linear or exponential.

49. The detection method of claim 48 wherein said amplifying *in vitro* is exponential.

50. The detection method of claim 7 wherein said amplifying *in vitro* comprises amplifying said separated target polynucleotide with at least one oligonucleotide primer.

51. The detection method of claim 50 wherein said amplifying *in vitro* is linear or exponential.

52. The detection method of claim 7 wherein said amplifying *in vitro* comprises amplifying said separated target polynucleotide with more than one polymerase.

[claims 53-63 canceled]

64. The method of claim 1 wherein said amplifying *in vitro* comprises amplifying said separated target polynucleotide non-specifically.

65. The method of claim 1 wherein said amplifying *in vitro* comprises amplifying said separated target polynucleotide specifically.

66. The method of claim 7 wherein said amplifying *in vitro* comprises amplifying said separated target polynucleotide non-specifically.

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67. The method of claim 7 wherein said amplifying *in vitro* comprises amplifying said separated target polynucleotide specifically.

[claims 68-69 canceled]

70. The method of claim 9 wherein the probe first binds with the target polynucleotide by hybridizing to a specific sequence in the target polynucleotide, and then binds to the first support.

71. The method of claim 70 wherein said amplifying *in vitro* comprises amplifying said separated target polynucleotide non-specifically.

72. The method of claim 70 wherein said amplifying *in vitro* comprises amplifying said separated target polynucleotide specifically.

73. The method of claim 72 wherein the sample is a clinical sample.

74. The method of claim 73 wherein the probe comprises a nucleotide sequence specific to a complementary nucleotide sequence in the target polynucleotide and a homopolymeric tail sequence.

75. The method of claim 74 wherein the support comprises a homopolymeric tail complementary to the homopolymeric tail of the probe.

[claims 76-82 canceled]

83. The method of claim 1 wherein said amplifying *in vitro* comprises amplifying said separated target polynucleotide with specially tailored primers.

84. The method of claim 7 wherein said amplifying *in vitro* comprises amplifying said separated target polynucleotide with specially tailored primers.

85. The method of claim 70 wherein said amplifying *in vitro* comprises amplifying said separated target polynucleotide with specially tailored primers.

86. The method of claim 85 wherein the sample is a clinical sample.

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